DT overview

Key stage 1

Investigate, design, make and evaluate - DT Planning Sheet

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]. When designing and making, pupils should be taught to:

Design

- design purposeful, functional, appealing products for themselves and other users based on design criteria
- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

Make

- select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

Technical knowledge

- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. Pupils should be taught to:

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

	Autumn	Spring	Summer				
Reception	Clay hedgehogs • using a variety of resources • Use simple tools and techniques Christmas Craft	 Fruit kebabs Begin to understand some food preparation tools, techniques and processes Practise stirring, mixing, pouring, blending Discuss how to make an activity safe and hygienic *Discuss use of senses Understand need for variety in food Begin to understand that eating well contributes to good health 	Weaving from nature join textiles to make a product, with some support				
Design	Use contexts set by the teacher and myself	 Select appropriate resources Use gestures, talking and arrangements of materials and components to show design 					
Make	 Construct with a purpose, using a variety of resources Use simple tools and techniques Build /construct with a wide range of objects Select tools & techniques to shape, assemble and join Replicate structures with materials / components 						

	 Discuss how to make an activity safe and hygienic Record experiences by drawing, writing, voice recording Understand different media can be combined for a purpose 						
Evaluate	 Adapt work if necessary Dismantle, examine, talk about existing objects/structures Consider and manage some risks Practise some appropriate safety measures independently Talk about how things work Look at similarities and differences between existing objects / materials / tools Show an interest in technological toys Describe textures 						
Year 1	Clay tile Junk Modelling – Levers and Slides Cooking – using foraged ingredients • Use appropriate materials • use levers or slides • use levers or slides • measure, cut and join textiles – decoration • begin to measure and join materials, with some support • describe textures • choose suitable textiles • describe differences in materials • think of interesting ways to decorate food • choose suitable textiles • suggest ways to make material/product stronger • describe differences heather and grate stronger						
Design	 have own ideas explain what I want to do explain what my product is for, and how it will work use pictures and words to plan, begin to use models design a product for myself following design criteria research similar existing products 						
Make	 explain what I'm making and why consider what I need to do next select tools/equipment to cut, shape, join, finish and explain choices measure, mark out, cut and shape, with support choose suitable materials and explain choices *try to use finishing techniques to make product look good work in a safe and hygienic manner 						
Evaluate	 Work in a sare and nyglenic manner talk about my work, linking it to what I was asked to do talk about existing products considering: use, materials, how they work, audience, where they might be used talk about existing products, and say what is and isn't good talk about things that other people have made begin to talk about what could make product better 						
Year 2	Cooking-smoothies/ soup Wheels and axles- rubber band vehicle Sewing • explain hygiene and keep a hygienic kitchen describe properties of ingredients and importance of varied diet • begin to understand how to use wheels and axles • measure materials • say where food comes from (animal, underground etc.) • describe some different characteristics of materials • describe some different ways • use joining, rolling or folding to make it stronger • use own ideas to try to make product • describe "five a day" • use own ideas to try to make product • use own ideas to try to make product • use own ideas to try to make product						

	Christmas Craft					
Design	 have own ideas and plan what to do next explain what I want to do and describe how I may do it explain purpose of product, how it will work and how it will be suitable for the user describe design using pictures, words, models, diagrams, begin to use ICT design products for myself and others following design criteria choose best tools and materials, and explain choices use knowledge of existing products to produce ideas 					
Make	 explain what I am making and why it fits the purpose make suggestions as to what I need to do next. join materials/components together in different ways measure, mark out, cut and shape materials and components, with support describe which tools I'm using and why choose suitable materials and explain choices depending on characteristics use finishing techniques to make product look good work safely and hygienically 					
Evaluate	 describe what went well, thinking about design criteria talk about existing products considering: use, materials, how they work, audience, where they might be used; express personal opinion evaluate how good existing products are talk about what I would do differently if I were to do it again and why 					

Key stage 2

Investigate, design, make and evaluate - DT Planning Sheet

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. When designing and making, pupils should be taught to:

Design

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

Make

- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

Evaluate

- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- understand how key events and individuals in design and technology have helped shape the world

Technical knowledge

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products.

Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. Pupils should be taught to:

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

	Autumn	Spring	Summer
Year 3	 Puppets – investigating different types of puppet select appropriate tools / techniques alter product after checking, to make it better begin to try new/different ideas use simple lever and linkages to create movement join different textiles in different ways choose textiles considering appearance and functionality begin to understand that a simple fabric shape can be used to make a 3D textiles project 	 Soup and bread carefully select ingredients use equipment safely make product look attractive think about how to grow plants to use in cooking begin to understand food comes from UK and wider world describe how healthy diet= variety/balance of food/drinks explain how food and drink are needed for active/healthy bodies. 	Clay/ Construction use appropriate materials work accurately to make cuts and holes join materials begin to make strong structures

	Christmas Craft	 prepare and cook some dishes safely and hygienically grow in confidence using some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking 	
Design	 begin to research others' needs show design meets a range of requirements describe purpose of product follow a given design criteria have at least one idea about how to create product create a plan which shows order, equipment and to describe design using an accurately labelled sketch make design decisions explain how product will work make a prototype begin to use computers to show design 		
Make	 select suitable tools/equipment, explain choices; be select appropriate materials, fit for purpose. work through plan in order *consider how good pro begin to measure, mark out, cut and shape materials/components with some accuracy begin to assemble, join and combine materials and begin to apply a range of finishing techniques with some 	oduct will be components with some accuracy	
Evaluate		w well they have been made, materials, whether they work, ho oducts were designed and learn about some inventors/designer	w they have been made, fit for purpose s/ engineers/chefs/ manufacturers of ground-breaking products
Year 4	 Cooking - savoury snacks explain how to be safe/hygienic think about presenting product in interesting/ attractive ways understand ingredients can be fresh, pre-cooked or processed begin to understand about food being grown, reared or caught in the UK or wider world describe eat well plate and how a healthy diet=variety / balance of food and drinks explain importance of food and drink for active, healthy bodies prepare and cook some dishes safely and hygienically use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking 	 Sound/ electricity models - Buzzer toy use simple circuit in product learn about how to program a computer to control product. use number of components in circuit select most appropriate tools/techniques explain alterations to product after checking it grow in confidence about trying new/different ideas. use levers and linkages to create movement measure carefully to avoid mistakes attempt to make product strong continue working on product even if original didn't work make a strong, stiff structure 	 Weaving think about user when choosing textiles think about how to make product strong begin to devise a template explain how to join things in a different way understand that a simple fabric shape can be used to make a 3D textiles project
Design	Christmas Craft use research for design ideas show design meets a range of requirements and is f begin to create own design criteria 	it for purpose	

Make	 have at least one idea about how to create product and suggest improvements for design. produce a plan and explain it to others say how realistic plan is. include an annotated sketch make and explain design decisions considering availability of resources explain how product will work make a prototype begin to use computers to show design. select appropriate materials, fit for purpose; explain choices work through plan in order. realise if product is going to be good quality measure, mark out, cut and shape materials/components with some accuracy assemble, join and compine materials and components with some accuracy assemble, join and compine materials and components with some accuracy 	
Evaluate	 apply a range of finishing techniques with some accuracy refer to design criteria while designing and making use criteria to evaluate product begin to explain how I could improve original design evaluate existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose discuss by whom, when and where products were designed research whether products can be recycled or reused know about some inventors/designers/ engineers/chefs/manufacturers of ground-breaking products 	
Year 5	Cooking – pizza design Geared model – cams Clay pot – emblems/ Textiles • explain how to be safe / hygienic and follow own guidelines refine product after testing * think about user and aesthetics when choosing textiles • present product well - interesting, attractive, fit for purpose grow in confidence about trying new/different ideas * understand food can be grown, reared or caught in the UK and the wider world • select materials carefully, considering intended use of product and appearance * begin to understand that a single 3D textiles project can be explain how three are different substances in food / drink needed for health • explain how there are different substances in food / drink needed for health • measure accurately enough to ensure precision • ensure product is strong and fit for purpose • begin to reinforce and strengthen a 3D frame • use range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. • Measure accurately enough to ensure precision • Measure accurately enough to ensure precision • use range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. • Christmas Craft • Christmas Craft	made
Design	 use internet and questionnaires for research and design ideas take a user's view into account when designing begin to consider needs/wants of individuals/groups when designing and ensure product is fit for purpose create own design criteria have a range of ideas produce a logical, realistic plan and explain it to others. use cross-sectional planning and annotated sketches make design decisions considering time and resources. 	

	 clearly explain how parts of product will work. model and refine design ideas by making prototypes use computer-aided designs 	and using pattern pieces.					
Make	 use selected tools/equipment with good level of precision produce suitable lists of tools, equipment/materials needed select appropriate materials, fit for purpose; explain choices, considering functionality create and follow detailed step-by-step plan explain how product will appeal to an audience mainly accurately measure, mark out, cut and shape materials/components mainly accurately assemble, join and combine materials/components mainly accurately apply a range of finishing techniques use techniques that involve a small number of steps 						
Evaluate	 begin to be resourceful with practical problems evaluate quality of design while designing and making evaluate ideas and finished product against specifical test and evaluate final product evaluate and discuss existing products, considering: h begin to evaluate how much products cost to make a research how sustainable materials are talk about some key inventors/designers/ engineers/ 	tion, considering purpose and appearance. now well they've been made, materials, whether they work, how ind how innovative they are	w they have been made, fit for purpose				
Year 6		 Program/monitor/ control- MICROBITS incorporate switch into product confidently use number of components in circuit begin to be able to program a computer to monitor changes in environment and control product use different types of circuit in product think of ways in which adding a circuit would improve product program a computer to monitor changes in environment and control product think of ways in which adding a circuit would improve product program a computer to monitor changes in environment and control product 	 Car model – wheels, axles and pulleys refine product after testing, considering aesthetics, functionality and purpose incorporate hydraulics and pneumatics be confident to try new/different ideas use cams, pulleys and gears to create movement select materials carefully, considering intended use of the product, the aesthetics and functionality. explain how product meets design criteria reinforce and strengthen a 3D frame 				
Design	 draw on market research to inform design use research of user's individual needs, wants, require identify features of design that will appeal to the integent of the in	ended user I exploded diagrams ost w they are fit for purpose					

	use computer-aided designs
Make	use selected tools and equipment precisely
	 produce suitable lists of tools, equipment, materials needed, considering constraints
	 select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics
	create, follow, and adapt detailed step-by-step plans
	explain how product will appeal to audience; make changes to improve quality
	accurately measure, mark out, cut and shape materials/components
	accurately assemble, join and combine materials/components
	accurately apply a range of finishing techniques
	use techniques that involve a number of steps
	be resourceful with practical problems
Evaluate	 evaluate quality of design while designing and making; is it fit for purpose?
	keep checking design is best it can be.
	evaluate ideas and finished product
	against specification, stating if it's fit for purpose
	 test and evaluate final product; explain what would improve it and the effect different resources may have had
	 do thorough evaluations of existing products considering: how well they've been made, materials, whether they work, how they've been made, fit for purpose
	evaluate how much products cost to make and how innovative they are
	research and discuss how sustainable materials are
	consider the impact of products beyond their intended purpose
	 discuss some key inventors/designers/ engineers/ chefs/manufacturers of ground-breaking products

Art overview

Key stage 1

The national curriculum for art and design aims to ensure that all pupils:

- produce creative work, exploring their ideas and recording their experiences
- become proficient in drawing, painting, sculpture and other art, craft and design techniques
- evaluate and analyse creative works using the language of art, craft and design
- know about great artists, craft makers and designers, and understand the historical and cultural development of their art forms.

Pupils should be taught:

- to use a range of materials creatively to design and make products
- to use drawing, painting and sculpture to develop and share their ideas, experiences and imagination
- to develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form and space
- about the work of a range of artists, craft makers and designers, describing the differences and similarities between different practices and disciplines, and making links to their own work.

	Sketchbooks									
	produce creative work, exploring their ideas and recording their experiences									
	become proficient in drawing									
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2				
Reception	Clay hedgehogs/ clay shapes and press shapes in creating texture Develop understanding of shape & form, using a variety of 3D materials. Make simple shapes from, and press shapes into clay, creating texture Cover boxes with paper & create patterns on the surface Build a group sculpture which stands	Drawing Make lines – steering, direction, control, line patterns with a variety of tools. Create observation & fantasy drawing using line skills	Painting Mix secondary colours. Controlling shape with brush, creating pictures.	Printing Develop knowledge of shape & pattern, use finger, card & transfer printing. Manipulate simple shapes & limited colours, to produce clear prints in an imaginative manner. Make repeated patterns & understand idea of symmetrical pattern	Weaving from nature Develop understanding of texture & skills in sewing & weaving. Identify different textures, patterns & understand patchwork. Choose fabrics to create a picture Use glue efficiently Manage in/out sewing & weaving techniques	Collage Develop knowledge of colour & texture. Draw round templates, fold, cut simple shapes & create a design with them. Use textured fabric & paper shapes in pictures.				
Year 1	Clay tile Textiles – Christmas decoration Develop variety of 3D materials focusing on shape & form. Combine clay with a painting, create a clay tile, make a picture with impressed shapes.	Drawing Develop line skills through observation drawings, creating line patterns, fantasy drawing. Use range of tools – Pencils, black felt pen, white chalk, coloured pencils.	Junk Modelling/ papier mache object – wheels and axels Make papier mache object & decorate with print or collage design.	Painting Develop understanding of colour. Use primary colours only and mix a variety of oranges, greens, purples in paints Use in painted & blown paint pictures, sometimes with wax crayons.	Collage Develop understanding of shape & colour. Carefully cut & tear shapes from paper, glue shapes onto drawn background. Appreciate torn edges. Use shapes to create a picture. Use primary coloured tissue to create secondary colours in a picture.	Printing Develop printing techniques through shape, pattern & colour. Print with found objects Creating pictures from primary colours. Make simple block & print repeat patterns using tones of secondary colour				

	Make papier mache object & decorate with print or collage design. Draw objects & make mini models using salt dough			Develop control of paint with brushes and blowing		
Year 2	Drawing Begin to understand knowledge of landscape and how to create different textures. Use a range of tools Variety of lines	Painting Develop colour mixing skills. Mix tints of orange & purple, tones of grey blue & green. Understand a tint is adding white, tone is adding black. Control paint using small brushes delicately, use spatula or blowing to create texture.	Wheels and axles- rubber band vehicle (DT Link – drawing and sketch book skills)	Printing Develop use of line within printing. Make block, transfer and press print designs, evenly printed in a controlled manner. Use colour in interesting & varied ways, experimenting with different colour papers to print on	Sewing Choose variety of appropriate materials to create a class landscape picture. To weave on a board. To control the weaving technique. Create mood through choice of colours. Develop a fabric collage. Make a wax crayon batik picture.	Collage Develop knowledge of shape, texture & colour. Use fabric appropriately in the design of a picture. Combine different media to create an appropriately scaled collage. Show ability to select & control materials. Show emotion in use of colour.

Key stage 2

The national curriculum for art and design aims to ensure that all pupils:

- produce creative work, exploring their ideas and recording their experiences
- become proficient in drawing, painting, sculpture and other art, craft and design techniques
- evaluate and analyse creative works using the language of art, craft and design
- know about great artists, craft makers and designers, and understand the historical and cultural development of their art forms.

Pupils should be taught to develop their techniques, including their control and their use of materials, with creativity, experimentation and an increasing awareness of different kinds of art, craft and design. Pupils should be taught:

- to create sketch books to record their observations and use them to review and revisit ideas
- to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]
- about great artists, architects and designers in history.

			Sketchbook	S		
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	Puppets –investigatingdifferent types ofpuppetWeave & understand warp &weft technique.Select colours & texturesappropriately.Select interesting textured &coloured fabrics to create apicture.Identify cool/warmbackground.Use observation drawings todesign fabric pictures.Understand the batik process.Control the use of dyes whenpainting fabric.Make 3D object from batikdesign.	Drawing Create line, pattern & tone with pencil & chalk/charcoal. Use these skills to draw from observation in large & small scale. Create an abstract design based on their observation drawings. Create an imaginative drawing.	Painting Mix & use a range of secondary colour tones. Use primary colours & mix a range of tints. Develop use of tones & tints to colour or decorate drawings & create paintings, imaginary, silhouette & observed.	Collage Appreciate importance of outline in silhouettes. Handle materials, tear & cut shapes reasonably well. Choose appropriate textures for subject matter. Give idea of space & distance. Mix translucent materials to gain colour mixes	Clay/ Construction Create 'real life' & 'giant' sized objects from previous observation drawings using new clay, firing clay (including coil pot technique), papier mache, cardboard & paper. Use tools appropriately. Decorate using impressions printed on surface, paint realistically using correct colours.	Printing Make and use a stencil in a controlled manner, building a picture in stages or layers. Understand potential of adding other elements to a print. Allow colours to mix on a page. Make a printed linear design & a press print.
Year 4	Drawing Use pencil, charcoal & chalk to create contrasting effects of line, texture & tone. Blend charcoal & chalk. Make observation drawing of an object to show shape & pattern. Develop new drawing to design own version of object to meet brief.	Painting Mix autumnal colours & create interesting textures. Use sgraffito technique. Mix tones of grey and use thin watery paint as a base atmosphere.	Sound/ electricity models - Buzzer toy (DT Link – drawing and sketch book skills)	Collage Create a variety of collages using the following techniques. Make symmetrical shapes by drawing & cutting paper. Explore qualities of materials & use the effectively. Small scale collage from	Weaving Board weave an image based on a painting, using tones of colour & textures with care. Create a large group collage based on a painting, using tones of colour & textures with care. Create an image inspired by part of a painting, using wrap weaving & collage.	Printing Create, transfer, block, offset & paper strip techniques. Use observation and preliminary drawings as stimulation. Create repeat patterns, use 2 primary & their secondary colour & create stencils.

	Combine painted background with drawing in felt pen.	Use collage & paint to create objects & reflections. Create a design using warm or cold colours & curved or straight lines		observation drawing of an object. Use torn paper.	Create an abstract batik design with wax crayons or learn the cold or hot wax method. Colour batik image with no more than 3 dye colours, allowing some areas to overlap.	
Year 5	Drawing Use a pencil to create line, tone, texture & pattern. Create a collage from pencil drawings. Use chalk on black & charcoal on white paper to create observation drawings. Use water soluble fine liner pens to make observation drawings & learn the wash technique. Design a label appropriate for an item which is clear and eye catching. Create a still life in the style of a well-known artist.	Printing Create mood with a transfer print, using line & colour. Create a press print from observation drawing, enhancing mood with line and colour. Create a successful monoprint from an observation line drawing. Use plastic to make an interesting print with various textures. Use the plastic print to create a distorted image.	Geared model – cams (DT Link – drawing and sketch book skills)	Painting Mix paints to match the colours in real objects. Make realistic collage from paper painted with these colours. Use the colours thick & apply with a spatula in the style of a well known artist. Design a class alphabet based on a theme, painting each letter smoothly and carefully. Design a carrier bag which reflects the name, colour & products of a given shop.	Clay pot – emblems/ Textiles Select part of a picture & reproduce a pencil drawing of it. Create a textured clay tile/pot based on the drawing. Create a 3D clay sculpture from paintings/drawings. Create an abstract 3D papier mache image on paper from drawings/paintings. Colour the papier mache model tissue paper.	Collage Create a mosaic picture of part of a face. Interpret a portrait painting in collage, using appropriate materials. To create a 3D symmetrical face showing feeling, from card. Create a portrait using appropriate materials to show character.
Year 6	Drawing Observe & record human bodies through a range of experiences. Observe & record line, shape, form & texture of a hand. Complete half a b&w picture of a face using charcoal & white chalk. Quick figure drawings from observation in bold & fine media. Make a portrait in chalks & charcoal creating texture in the marks. Produce a distorted selfportrait. Create a collage & drawn portrait in the style of a well- known artist.	Printing Create a transfer print combining sharp line & soft colour. Mix coloured chalks with black/white to create tones/tints & use in a drawing. Understand how to make an abstract design. Make a controlled repeat pattern , experimenting with different ways to join blocks. Make positive & negative monoprints based on a painting	Program/monitor/ control- MICROBIT (DT Link – drawing and sketch book and computer-aided design skills)	Painting Produce a portrait of a partner using tones of grey which emphasise the dark & light of the head. Use a spatula/spreader to apply paint. Mix paint colours to match subtle colour of something or someone. Produce a painting that captures the colour, tone & texture of an object. Design & paint an object, creating humour in the design.	Car model – wheels, axles and pulleys	3D Use art straws/card to create a 3D picture based on a painting. Create a stained glass window effect picture using overlapping tissue to create colours & outline in black pen. Use observation drawing of natural object to create a wool/string collage showing texture pattern. Combine mixture of materials to create a collage based on a painting/drawing. Design objects using paintings etc as inspiration. Form curved & straight sided blocks out of clay. Blend shapes of clay carefully & effectively to make a larger object. Cut and model clay to required shape & texture. Combine cardboard & papier mache to create a carefully made sculpture creating mood through the colours